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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,239	07/22/2003	Yong Min Luo		8619

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EXAMINER

PATEL, RITA RAMESH

ART UNIT PAPER NUMBER

1746

DATE MAILED: 12/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/625,239

Applicant(s)

LUO, YONG MIN

Examiner

Rita R. Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 11-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 17 and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Priority***

Acknowledgement has been made of applicant's claim for priority under 35 U.S.C. 119.

### ***Drawings***

The drawings received 07/22/03 are acceptable for examination purposes.

### ***Election/Restrictions***

Claims 11-16 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected method, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 10/31/05.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 6-9, and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki (US Patent No. 6,041,799) and further in view of La Pan (US Patent No. 3,681,856).

Aoki teaches a microwave-excitation cleaning and rinsing apparatus for a substrate holder 8 for mounting wafers 9 thereon (Fig. 1). Albeit Aoki shows cleaning

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for a substrate holder, said apparatus may similarly be used for a supporting tray for a printed circuit board (PCB); this relies on the intended use of the apparatus as the apparatus is structurally capable of functioning under applicant's claims. Aoki further discloses a main body with a shield cover 6, an inlet 2a for supplying pure water, an outlet 2b for draining liquid, a substrate holder 8, and a microwave oscillator 3 for generating microwaves which are supplied to the pure water or cleaning chemical solution within the cell 1 (col. 3, lines 30-32; Fig. 1). Also, Aoki teaches a control process for the microwave transmitting magnetron whereby the magnetron is turned ON or OFF to fulfill the cleaning expectations (col. 3, lines 60-67).

Aoki lacks the teaching of a drying unit connectively attached to said cleaning and rinsing apparatus. La Pan teaches a product dryer for drying trays wherein said dryer comprises of a holding space for the tray 54, control valves 78, 82, 92, blower intake 33, air inlet 63, heaters 41, 64, exhaust fan 69, and exhaust pipes 67. See Figures 1-3. In Figure 1 La Pan illustrates the use of multiple heaters 64 located within the apparatus, therein connectively attached to a blower intake 33. The blower intake fan 33 is located on the side outer cover of the apparatus, whereby on the upper outer cover "the units 43 and 47 are shown as controlled by piston-cylinder units 75 and 76, respectively, in an air circuit 77 controlled by a valve 78 operable to deliver air to either side of the pistons of the units 75 and 76 and simultaneously vent air from the opposite side thereof" (col. 4, lines 61-65). La Pan shows the location of the exhaust fan 69 in Figure 2 in the rear of said drying apparatus; in addition, the "exhaust pipes 67 extending as pre-heaters through the air inlet 63 and into the exhaust stack 68 whose

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upper end is in communication with the exhaust fan 69 " (col. 4, lines 11-15). In Figure 1 La Pan shows a wall extension 41, which can inherently be used to maintain heat within the apparatus. The wall extension illustrated by La Pan forms a closed boundary around the heater thereby maintaining the heat expended specifically by the heater. This reads on applicant's claim wherein an adiabatic net is provided about the heater to prevent the user from touching the heaters and getting hurt; the wall shown by La Pan is adiabatic because it aims to eliminate heat transfer from the heaters to the rest of the machine, thus the rest of the apparatus remains non-heated, preventing the user from touching the heaters and getting hurt. It would be obvious to one of ordinary skill in the art at the time of the invention to integrate the apparatus teachings of Aoki and La Pan to fulfill drying expectations when cleaning and rinsing a tray since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki and La Pan as applied to claim 1 above, and further in view of Chen (US Patent No. 5,068,030).

Aoki and La Pan fail to teach the use of an electromagnetic valve, as well as a sensor within the cleaning apparatus used to sense the water level. Chen teaches a water filtering apparatus wherein a water supply stream provides water to the body of the system and is thereafter cleansed using a microwave oscillator (Abstract). Although Chen does not utilize said apparatus for cleaning trays, the boxed-shaped storage tank

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5 of the system is capable of containing trays within as it cleanses. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. MPEP 7.37.09. The intake valve is actuated by the displacement of a float 53, located inside the tank 5, used to measure the height of the water within the system. Chen further discloses an "electromagnetic valve 52 for controlling the flow of water to the tank 5 is disposed in the fluid line between the tube 42 and the micro switch 54" (col. 3, lines 1-4). Chen fails to teach the use of an electromagnetic valve on the outlet of said apparatus, however, it would have been obvious to one having ordinary skill in the art at the time the invention was made to attach an electromagnetic valve on the outlet stream of the system as done on the inlet supply stream, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. Nevertheless, Chen teaches the use of faucet-like hand valves 42, 57 connected to the outlet stream in Figure 2 for controlling flow of liquid. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Chen with Aoki and La Pan in order to provide a tray cleaning/drying apparatus with a controlled sensor and valve system for monitoring water intake/outtake and the water level within the body of the apparatus.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki and La Pan as applied to claim 1 above, and further in view of Dobson (US Patent No. 5,372,153).

Aoki and La Pan fail to teach the use of caster wheels attachedly connectedly to the bottom of said cleaning/drying apparatus. However, Dobson teaches the use of said caster wheels on a pallet cleaner. Although Dobson does not teach the use of said caster wheels on a tray cleaning device, the pallet cleaning device is structurally capable of holding said trays for the purpose of cleaning them; it is the intended use of the apparatus shown by Dobson to utilize the apparatus for cleaning trays, thereby meeting applicant's claims. In Figure 1 of Dobson, two pairs of caster wheels 26 are illustrated. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teaching of caster wheels as shown by Dobson to the tray cleaning/drying apparatus taught by Aoki and La Pan to achieve expectations of portability and means for convenient mobility of the machine.

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rita R. Patel whose telephone number is (571) 272-8701. The examiner can normally be reached on M-F: 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RRP



**MICHAEL BARR**  
SUPERVISORY PATENT EXAMINER